PIXMA MP110/130 SERVICE MANUAL

REVISION 0

HY8-13A2-000

Scope

This manual has been issued by Canon Inc., to provide the service technicians of this product with the information necessary for qualified persons to learn technical theory, installation, maintenance, and repair of products. The manual covers information applicable in all regions where the product is sold. For this reason, it may contain information that is not applicable to your region.

Revision

This manual could include technical inaccuracies or typographical errors due to improvements or changes made to the product. When changes are made to the contents of the manual, Canon will release technical information when necessary. When substantial changes are made to the contents of the manual, Canon will issue a revised edition.

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I. MANUAL OUTLINE

This manual consists of the following three parts to provide information necessary to service the PIXMA MP110/MP130:

Part 1: Maintenance

Information on maintenance and troubleshooting of the PIXMA MP110/MP130

Part 2: Technical Reference

New technology and technical information such as FAQ's (Frequently Asked Questions) of the PIXMA MP110/MP130

Part 3: Appendix

Block diagrams PIXMA MP110/MP130

Reference:

This manual does not provide sufficient information for disassembly and reassembly procedures. Refer to the graphics in the separate Parts Catalog.

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Part 1

Maintenance

1. MAINTENANCE

1-1 Adjustment, Periodic Maintenance, Periodic Replacement Parts, and Replacement Consumables by Service Engineer

(1) Adjustment

Item	Timing	Purpose	Tool	Approx. time
Country setting (Service Mode)	- At MAIN BOARD ASS’Y replacement	To set the country.	None (Service Mode MARKET MODEL-JPN)	1 min.
Registration of waste ink absorption amount at the waste ink counter (Service Mode)	- At MAIN BOARD ASS’Y replacement - At INK ABSORBER (HY7-2819/2820) replacement	To register the waste ink absorption amount at the waste ink counter.	None (Service Mode COUNTER ACSESS)	1 min.
Print head alignment	- At print head replacement - At MAIN BOARD ASS’Y replacement	To compensate the print head landing-in position error.	None - Main body buttons - Computer settings via the printer driver	2 min.
Paper feed motor installation adjustment *1	-At PAPER FEED MOTOR UNIT replacement	To adjust the belt tension. (Install the paper feed motor unit by moving in the direction to stretch the belt tightly with proper tension.)	None	2 min.
Grease application	-At CARRIAGE UNIT replacement -At MAIN UNIT replacement	-To apply grease to the carriage sliding portion and the carriage rail portion. - To apply grease to the blade. - To apply grease to the Eject Roller sliding portion.	-FLOIL KG-107A (QY9-0057) -MOLYKOTE PG641 (CK-0562)	2 min.

*1: Caution for the paper feed motor installation adjustment
The screws securing the paper feed motor may be loosened only at replacement of the paper feed motor unit.

(2) Periodic maintenance

Item	Timing	Purpose	Tool	Approx. time
None				

(3) Periodic replacement parts

Item	Timing	Purpose	Tool	Approx. time
None				

(4) Replacement consumables

Item	Timing	Purpose	Tool	Approx. time
None				

1-2 Customer Maintenance

Item	Timing	Purpose	Tool	Approx. time
Print head alignment	At print head replacement.	To compensate the print head landing-in position error.	- Main body buttons - Computer performed by the automatic settings via the printer driver	3 min.
Print head cleaning	When print quality is not satisfying.	To improve nozzle conditions.	- Main body buttons - Computer settings via the printer driver	30 sec. - 1 min.
Print head refreshing	When print quality is not satisfying (and not improved by print head cleaning).	To improve nozzle conditions.	- Main body buttons - Computer setting via the printer driver	1 min. - 1 min. and half
Ink tank replacement	When an ink tank becomes empty. (At No Ink error)	-	-	2 min.
Paper feed roller cleaning	When paper cannot be fed properly.	To clean the paper feed rollers.	Main body buttons	2 min.

1-3 Product Life

(1) Main body

At any of the following (I) to (II), whichever comes first.

(I) Print Volume: 4,000 pages

BK: 2,000 pages (in printing A4, Black 1,500 character standard document pattern)

CL: 1,200 pages (in printing A4, 7.5 % duty per color pattern)

120 pages (in printing A4, photo, borderless)

80 pages (in printing L-size, photo, borderless)

600 pages (in printing Postcard, photo, borderless)

The figures of Print Volume shown above indicate an assumed breakdown when an average user prints 4,000 pages.

(II) Years of use:

3 years of use

(2) Print head

Item	Details
Structure	4 color integrated head (Detachable ink tanks)
Print head	Bk: 320 nozzles, 2-column vertical array C/M/Y: 128 nozzles/color, 2-column vertical array/color Droplet: Bk 30pl, Col 5pl/2pl
Ink colors	Bk (pigment), Col: C, M, Y (high coloration)
Ink tanks	BCI-24Black, BCI-24Color
Weight	Approx. 58 g (ink tanks are not included)
Form of supply	Service parts (ink tanks are not included) Service parts number: QY6-0054
Product life	4,000 pages (the same as the main body)

(3) Ink tanks

BCI-24Black: approx. 300 pages (JEIDA standard patternJ1, plain paper, standard mode)
approx. 520 pages (ISO JIS-SCID No. 5 pattern, plain paper, standard mode)

BCI-24Color: approx. 170 pages (ISO JIS-SCID No. 5 pattern, plain paper, standard mode)

1-4 Special Tools for Service

Name	Tool No.	Purpose	Remarks
MOLYKOTE PG641	CK-0562-000	To be applied to the lift cam base upper gear and the lift cam shaft sliding portion.	In common with other models.
FLOIL KG-107A	QY9-0057-000	To be applied to the carriage sliding portion, the carriage rail portion, and the paper guide flapper’s sliding portion.	In common with other models.

1-5 Serial Number Label Location

The middle on the rear cover



2. LIST OF ERROR DISPLAY / INDICATION

Error Messages

Look for the applicable error message and execute the appropriate countermeasures.

2-1 User's error messages

Look for the applicable error message and execute the appropriate countermeasures.

"BLACK INK LOW"

Cause: The ink level in the black ink tank is low.

Solution: Make sure you have a new black ink tank ready to replace the used one when ink runs out. If the machine stops printing when copying or photo printing, you can continue printing by pressing the [OK] button. However, note that ink may run out. If print quality deteriorates or the print out is blank, replace the ink tank.

"CANNOT USE CARD TURN OFF AND ON"

Cause: You have inserted a memory card incompatible with the machine or a damaged memory card into the card slot.

Solution: Remove the memory card from the card slot, and then turn the power OFF and ON again.

"CARD READ ERROR TURN OFF AND ON"

Cause: The data on the memory card may be inaccessible.

Solution: Check the data on the memory card in your digital camera.

Check the connection between the multi-card board and the MAIN board.

Replace the multi-card board.

Replace the MAIN board.

“CARTRIDGE JAMMED”

Printing position compensation failed

Cause: Carriage movement prevented by one of the following.

Damaged or deformed carriage shaft.

Insufficient grease.

Solution: Replace the carriage shaft.

Replace the deformed parts.

Apply more grease.

Cause: Bi-directional print displacement compensation failed because the carriage motor is out of step, or some similar reason.

Solution: Replace the carriage motor.

Home position error

Cause: Tried to stop the carriage unit that has been moving or to move the carriage unit at a pause by force.

Solution: Do not touch the carriage unit other than the carriage at the cartridge replacement position.

Cause: Foreign body in carriage section.

Solution: Open flatbed ass’y and remove the foreign body.

Cause: Loose carriage belt.

Solution: Replace the carriage unit.

Cause: Carriage motor does not work.

Solution: Switch Power OFF/ON.

Replace the carriage motor.

Cause: The position of the carriage cannot be detected (due to smears on the carriage encoder film or a MAIN board failure).

Solution: Switch Power OFF/ON.

Wipe the carriage encoder film with a cloth moistened with alcohol.

Replace the carriage unit.

Replace the carriage encoder film.

Replace the MAIN board.

“CHECK PRINTER”

Cause: The printer’s internal unit has malfunctioned.

Solution: Clear the paper jam.

Press the [OK] button.

Reinstall the print head.

Turn the power off and on.

“COLOR INK LOW”

Cause: The ink level in the color ink tank is low.

Solution: Make sure you have a new color ink tank ready to replace the used one when ink runs out. If the machine stops printing when copying or photo printing, you can continue printing by pressing the [OK] button. However, note that ink may run out. If print quality deteriorates or the print out is blank, replace the ink tank.

“COVER OPEN”

Cause: You opened the scanning unit (printer cover) during an operation.

Solution: Close the scanning unit (printer cover).

Cause: Cover sensor failure.

Solution: Replace the cover sensor.

“PUT IN CARTRIDGE”

Cause: The print head is not set in this machine.

Solution: Set the print head.

“PLEASE CLEAR PAPER JAM AND PRESS [OK]”

Cause: There is a recording paper jam.

Solution: Clear the recording paper jam and press the [OK] button.

“PLEASE LOAD PAPER AND PRESS [OK]”

Cause: The multi-purpose tray is empty.

Solution: Load paper in the multi-purpose tray. Make sure that the stack is below the paper limit mark. Then press the [OK] button.

“WASTE NEAR FULL”

Cause: The waste ink tank absorber (which holds the ink used for print head cleaning) is nearly full.

Solution: If the “CHECK PRINTER” message is displayed, select “COUNTER ACCESS” in the Service Mode and input “0” at the waste ink counter. After that, replace the ink tank absorber.

“WRONG CARTRIDGE”

Cause: The print head is not installed correctly.

Solution: Install the print head correctly.

Cause: The print head failure.

Solution: Replace the print head.

2-2 User Error Codes

None.

2-3 Service Error Codes

None

2-4 New Error Code and Recovery Methods

None

2-5 Warnings

Main body no LED indications.

Displayed warning	Remarks
None	None

2-6 Troubleshooting by symptom

	Symptom	Solution	Remarks
General errors	**The unit does not power on.**	(1) Check the power cord connection. (2) Check the connection between the MAIN board (J5) and the power supply unit. (3) Replace the power supply unit.	
	Nothing is displayed in LCD display.	(1) Check the connection between the Operation panel unit and the MAIN board (J4). (2) Replace the SCANNER unit. (3) Replace the MAIN board.	
	The buttons on the operation panel do not work.	(1) Check the connection between the Operation panel unit and the MAIN board (J4). (2) Replace the SCANNER UNIT. (3) Replace the MAIN board.	
Printing operation errors	**Paper is not fed properly. (The Paper feed motor does not run.)**	(1) Check the connection between the paper feed motor and the MAIN board (J7). (2) Replace the paper feed motor. (3) Replace the MAIN board. *1	
	Paper is not picked up from the auto sheet feeder.	(1) Check whether there is any broken part or foreign matter in the paper feed section. (2) Replace the SEPARATION UNIT. (3) Replace the MAIN board. *1	
	The carriage motor does not run.	(1) Check the connection between the carriage motor and the MAIN board (J6). (2) Replace the carriage motor. (3) Replace the MAIN board. *1	
Printing quality errors	**- Nothing is printed at all.** **- Colors are not printed.**	(1) Remove the print head and reinstall it. (2) Perform the cleaning on the print head five times with the cleaning operation and print out the nozzle check pattern. Visually cheek the test print for non-discharge of ink from nozzle. (*Fig. 1-1)* (3) Replace the print head. *2 (4) Replace the appropriate ink tank. (5) Replace the purge unit. (6) Replace the carriage unit. (7) Replace the MAIN board. *1	

	Symptom	Solution	Remarks
Printing quality error	**Blotches or blank ink appears after cleaning the print head. Lines that the printing data does not contain are printed.**	(1) Remove the print head and reinstall it. (2) Perform the cleaning on the print head five times with the cleaning operation and print out the nozzle check pattern. Visually check the test print for non-discharge of ink from nozzle. (*Fig. 1-1)* (3) Replace the print head. *2 (4) Replace the appropriate ink tank. (5) Replace the purge unit. (6) Replace the carriage unit. (7) Replace the MAIN board. *1 (8) Replace the MAIN board.	
	Soiled paper	(1) Feed a few sheets of paper through the machine. (2) Clean the paper feed section with a clean cloth or a clean cotton bud.	
	Pictures or characters are extended in print results.	**<Carriage scanning direction>** (1) Check whether grease is applied to the carriage encoder film. (2) Carefully and gently wipe the carriage encoder film using lint-free paper moistened with alcohol. Do not scratch the surface of the carriage encoder film. (3) Replace the carriage encoder film. (4) Replace the carriage unit. **<Paper feeding direction>** (1) Check whether grease is applied to the paper feed encoder film. (2) Carefully and gently wipe the paper feed encoder film using lint-free paper moistened with alcohol. Do not scratch the surface of the paper feed encoder film. (3) Replace the paper feed encoder film. (4) Replace the timing sensor unit.	
Scanning errors	**The Contact Sensor drive motor does not run.**	(1) Check the connection between the contact sensor drive motor and the MAIN board (J8). (2) Replace the scanner unit. (3) Replace the MAIN board.	
	The Scanned images are abnormal.	(1) Check the connection between the contact sensor and the MAIN board (J8). (2) Replace the scanner unit. (3) Replace the MAIN board.	
	The image has vertical stripes. The colors or the brightness of the image is abnormal.	(1) Clean the document glass. (2) Check the connection between the contact sensor and the MAIN board (J8). (3) Replace the scanner unit. (4) Replace the MAIN board.	

*1 The absorption amount of the waste ink absorber is set based upon the amount that the BJ cartridge has ejected. The settings of the waste ink capacity are stored in EEPROM of MAIN board. When replacing the MAIN board, check the waste ink capacity before the replacement, and input the waste ink capacity at the new MAIN

board after the replacement.

*2 Replace the print head only when the machine does not recover after refreshing the print head twice.

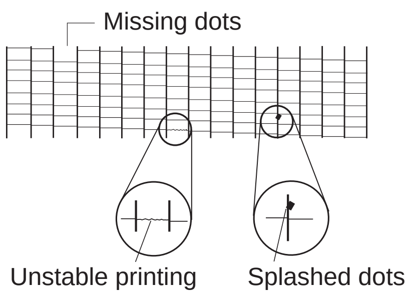


Figure1-1 Defective Pattern Sample

3. REPAIR

3-1 Notes on Service Part Replacement (and Disassembling / Reassembling)

Service part	Notes on replacement*1	Adjustment / settings	Operation check
MAIN BOARD ASS'Y (HY7-2810/2811)	- Before removal of the MAIN board ass'y, remove the power cord, and allow for approx. 1 minute (for discharge of capacitor's accumulated charges), to prevent damages to the MAIN board ass'y. [For details, see 3-2. Special Notes on Repair Servicing (2) Notes on disassembly.]	<After replacement> 1) All clear. 2) Register the waste ink absorber capacity at COUNTER ACCESS in the Service Mode. 3) Set MARKET MODEL in the Service Mode. [For details of 1) to 3) above, see 3-5. Service Switches] 5) Set MECHANICAL SET in the Service Mode.	- Nozzle check patten print - Printing via USB connection
INK ABSOBER (HY7-2819/2820)		<After replacement> 1) Register the waste ink counter. [For details, see 3-5. Service Switches]	- Nozzle check patten print
CARRIAGE UNIT (HY7-2844)		<At replacement> 1) Apply grease to the sliding portion. [For details, see 3-3. Adjustment / Settings (3) Grease application.] <After replacement> 1) Perform the print head alignment in the User Mode. 2) Shipment Settings [For details, see 3.5. Service Switches.]	- Nozzle check patten print
PAPER FEED MOTOR UNIT (HY7-2826)	- The screws securing the paper feed motor are allowed to be loosened. (DO NOT loosen any other red screws.)	<At replacement> 1) Adjust the paper feed motor. [For details, see 3-3. Adjustment / Settings (1) Paper feed motor adjustment.]	

Service part	Notes on replacement*1	Adjustment / settings*2	Operation check
TIMING SLIT STRIP FILM (HY7-2821) TIMING SLIT DISK FILM (HY7-2817)	-Upon contact with the film, wipe the film with ethanol. - Confirm no grease is on the film. (Wipe off any grease thoroughly with ethanol.) - Do not bend the film	<After replacement> 1) Perform the print head alignment in the User Mode.	- Nozzle check patten print
PRINT HEAD (QY6-0054))		<After replacement> 1) Perform the print head alignment in the User Mode.	- Nozzle check patten print

*1: General notes:

- Make sure that the flexible cables and wires in the harness are in the proper position and connected correctly.
  [For details, see 3-2. Special Notes on Repair Servicing, (1) Flexible cable and harness wiring, connection.]
- Protect electrical parts from damage due to static electricity.
- Before removing a unit, after removing the power cord, allow the printer to sit for approx. 1 minute (for capacitor discharging to protect the logic board ass'y from damages).
- Do not touch the timing slit strip film and the timing slit disk film. No grease or abrasion is allowed.
- Protect the units from soiled with ink.
- Protect the housing from scratches.
- Exercise caution with the red screws, as follows:

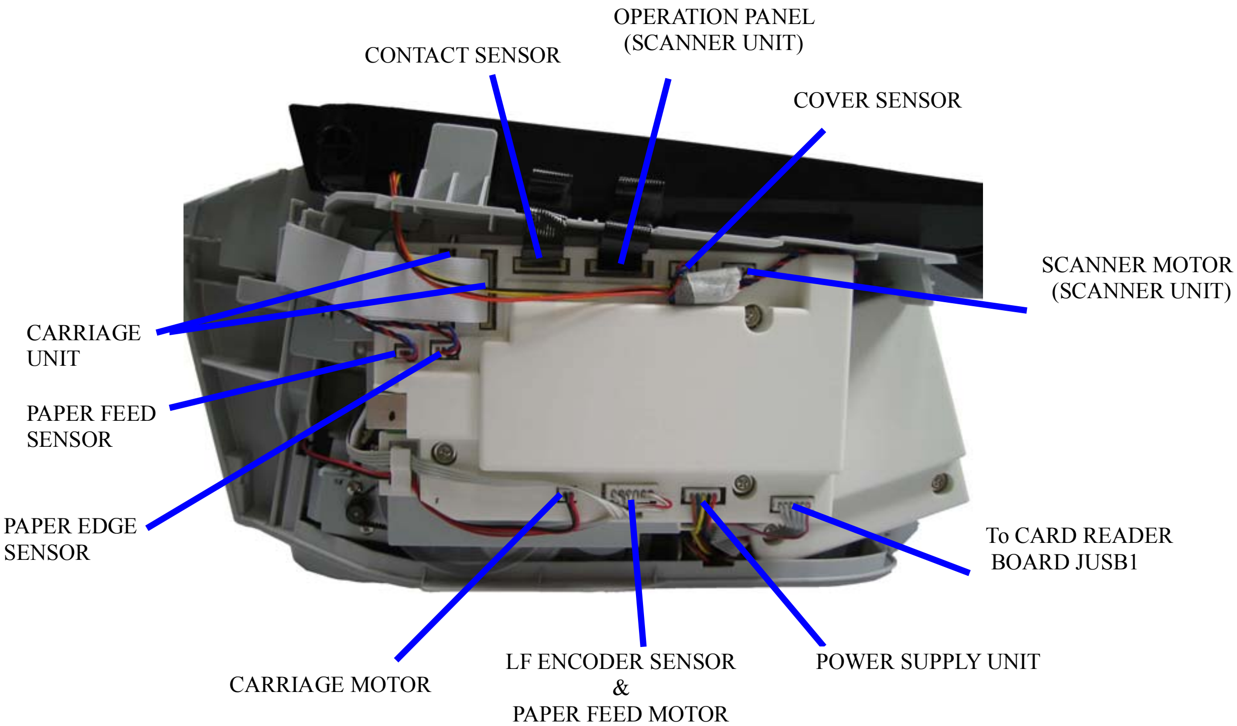
i. The screws securing the paper feed motor may be loosened only at replacement of the paper feed motor unit (DO NOT loosen them in other cases).

3-2 Special Notes on Repair Servicing

(1) Flexible cable and harness wiring, connection

Be careful of wiring of the flexible cables and harness. Improper wiring or connection may cause breakage of a line, leading to ignition or emission of smoke.

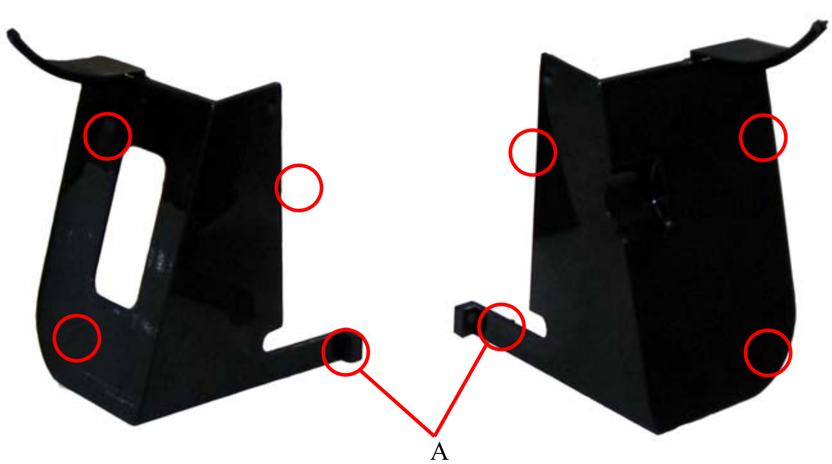
(I) MAIN board wiring



(2) Notes on disassembly

As a rule, refer to the Parts Catalog for instructions on how to disassemble and assemble the machine. The following describes notes on disassembling.

(I) Claws when removing the front right cover or the front left cover



Each of the front right cover or the front left cover has 4 claws.
Since the claws of A are located back of the paper feed section, remove the covers at the A claws from inside by hand as shown below.

3-3. Adjustment / Settings

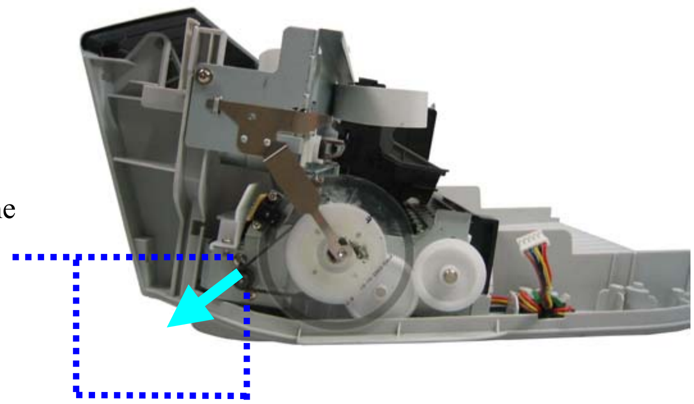
(1) Paper feed motor adjustment

The following adjustment is necessary when installing the paper feed motor unit.

1) When installing the motor unit, secure the screws by moving in the direction to stretch the belt tightly with proper tension (in the direction indicated by the light blue arrow in the figure below).

2) After replacement, be sure to perform the Service Test Print. Confirm that no noise or no abnormal print result (due to an unfastened belt, a step-out motor, misalignment of gear teeth) occurs.

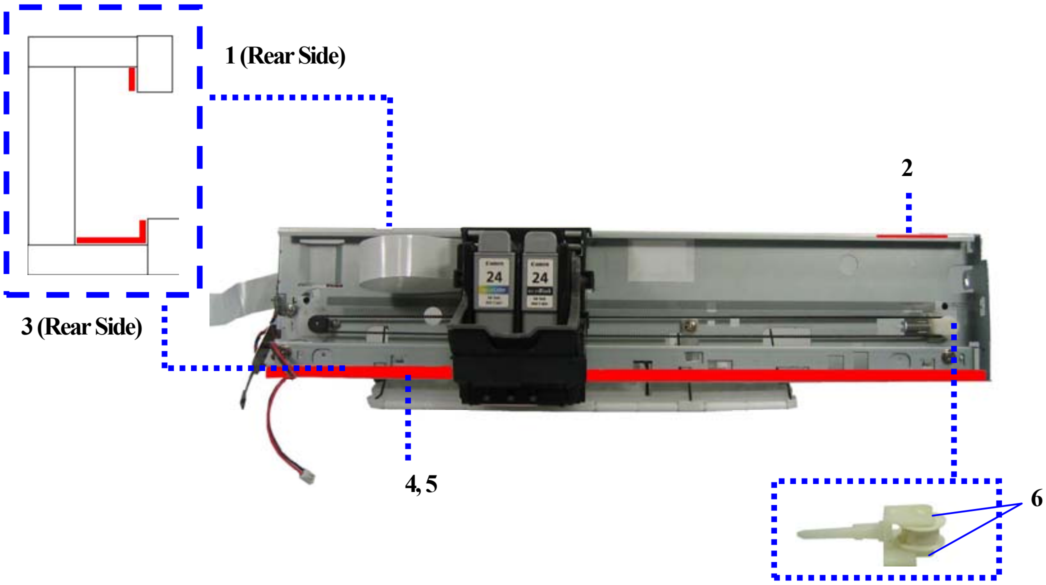
Screws securing the Paper Feed Motor

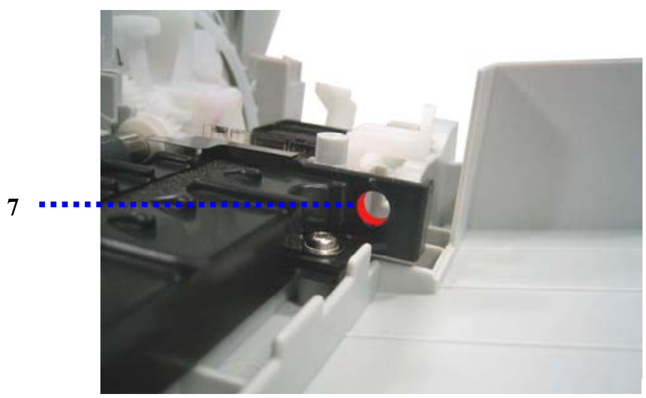


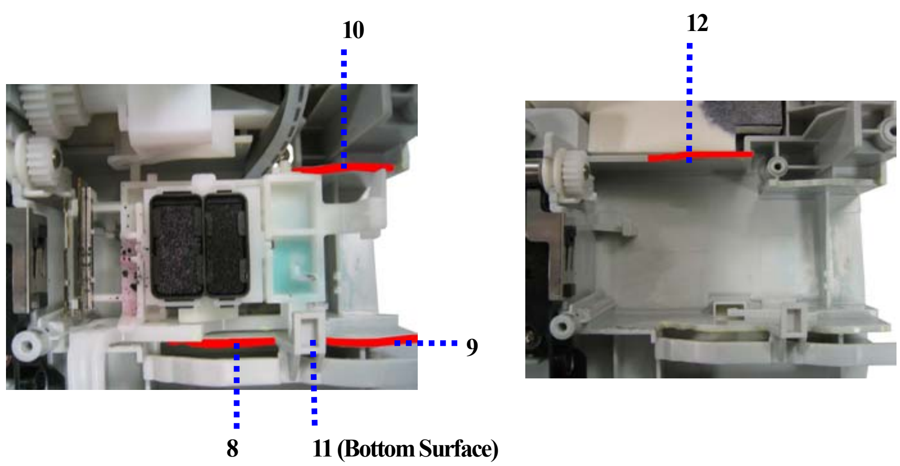
Note:

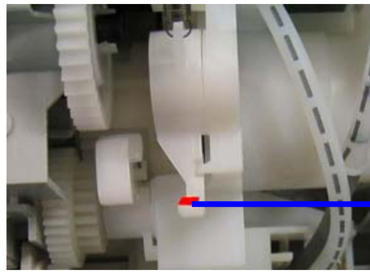
The screws securing the paper feed motor may be loosened only at replacement of the paper feed motor unit. DO NOT loosen them in other cases.

(2) Grease application









Parts to be applied	Locations		Grease/Oil Type	Amount
PRINTER FRAME	1	CARRIAGE UNIT Sliding Portion (back surface)	FLOIL KG107	60 - 140 mg
	2	Chassis Surface	FLOIL KG107	9 - 18 mg
CARRIAGE RAIL	3	CARRIAGE UNIT Sliding Portion (back surface)	FLOIL KG107	240 - 360 mg
	4	CARRIAGE UNIT Sliding Portion (front surface)	FLOIL KG107	60 - 140 mg
	5	CARRIAGE UNIT Sliding Portion (bottom surface)	FLOIL KG107	35 - 60mg
IDLER PULLY	6	IDLER PULLY Sliding Portion	MOLYKOTE PG641	4 - 12 mg x 2 places
PLATEN UNIT	7	EJECT ROLLER Sliding Portion	FLOIL KG107	4 - 12 mg
BOTTOM FRAME ASS'Y	8	PURGE UNIT Sliding Portion	MOLYKOTE PG641	9 - 18 mg
	9	PURGE UNIT Sliding Portion	MOLYKOTE PG641	9 - 18 mg
	10	PURGE UNIT Sliding Portion	MOLYKOTE PG641	9 - 18 mg x 5 places
	11	PURGE UNIT Sliding Portion	MOLYKOTE PG641	Oil film
	12	PURGE UNIT Sliding Portion	MOLYKOTE PG641	9 - 18 mg
TRIGGER ARM	13	CARRIAGE UNIT Sliding Portion	MOLYKOTE PG641	4 - 12 mg

(3) Waste ink counter setting

When the MAIN board ass'y is replaced, register the waste ink counter.
Register the waste ink counter from COUNTER ACCESS in the Service Mode.

3-4 User Data Flowchart

Press the COPY button, and press the Menu button.

- 1.ENLARGE/REDUCE
  - PRESET RATIO
    - 25% MIN.
    - 95% A4 -> LTR
    - *100%
    - 170% 5"x7" -> LTR
    - 212% 4"x6" -> LTR
    - 400% MAX.
  - ZOOM - 25% - 400%
- 2.PAPER SIZE
  - *LTR
  - 4"x6"
  - 5"x7"
  - A4
- 3.PAPER TYPE
  - *PLAIN PAPER
  - HIGH RES.
  - PH PRO
  - OTHER
- 4.DENSITY
  - LT
  - DK
- 5.IMAGE QUALITY
  - *NORMAL
  - FINE (PHOTO)
  - FAST
- 6.SPECIAL COPY
  - *NONE
  - BDERLESS COPY
- 7.USER DATA
  - 1.INK VOLUME
    - 1.LOWINK WARNING
      - ON
      - OFF
    - 2.INKCOUNT RESET
      - BLK INK CHANGED?
        - YES=[-]
        - NO=[+]
      - COL INK CHANGED?
        - YES=[-]
        - NO=[+]
  - 2.MAINTENANCE
    - NOZZLE CHECK
    - ALIGN HEAD
    - CLEANING
    - HEAD REFRESHIN
    - ROLLER CLEANIN
  - 3.QUIET PRINTING
    - OFF
    - ON
  - 4.XTENSION AMUNT
    - SMALL
    - LARGE

Press the Photo Print button, and press the Menu button.

- 1.PHOTO PRINT
  - INDEX
  - ALL IMAGES
  - SINGLE IMG – IMAGE NUMBE – NO. OF PRINT
  - SEL RANGE
    - FRAME RANGE – FIRST – LAST
    - DATE RANGE – DATE: From – DATE: To
- 2.SELECT SIZE
  - LTR
  - 4"x6"
  - 5"x7"
  - A4
- 3.SELECT TYPE
  - PLAIN PAPER
  - HIGH RES.
  - GLOSSY
  - PH PRO
  - PH PLUS
  - OTHER
- 4.PRINT DATE
  - OFF
  - ON
- 5.USER DATA *

*: Refer to the Copy Mode Menu.

3-5 Service Switches

(1) Hardware Switches

There is no service hardware switch on the Circuit board.

(2) Service Data Overview

Service data can be checked and changed with items on display menus.
The effective SSSWs/parameters and their default values in this machine are shown in Service Menu Settings.

SERVICE MENU
FIRMWARE: xx.xx

The version number of ROM mounted on the main unit is displayed.

LANG. SELECT?

These setting items are for changing language display, such as language can be selected or cannot be selected.
If NO=>YES is set, LANG.SELECT screen is displayed when you switch on the power next time.

CARD PROTECT?

These setting items are for design review.
Therefore, never select "NO" here.

MARKET MODEL? US / OT /JP

These setting items are for country.

COUNTER ACCESS

These setting items are used for inputting actual use results of the main unit after replacing SPCNT.
*Number of Print, Number of CIS reading, Absorption Amount to Main Ink Absorber, Absorption Amount to Platen Ink Absorber

NVRAM ACCESS.

These setting items are for main unit evaluation.

FACTORY DEFAULT

These setting items are for design review.
Therefore, never select "NO" here.

MECHANICAL SET

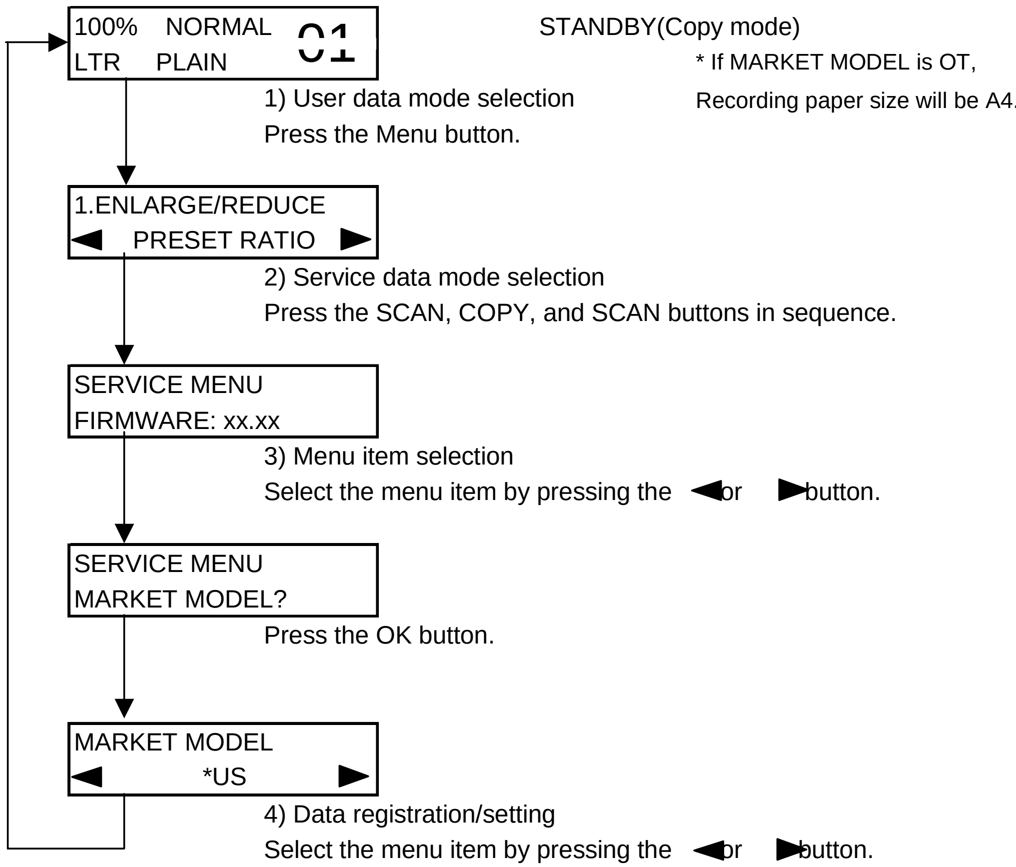
These setting items are used after completing service maintenance.
Always operate after completing maintenance.

DIAGNOSTIC MENU
Firmware: xx.xx

Test Mode is displayed.

(3) Service Data Registration/ Setting Method

Service data can be registered/set by the following operations:



Press the Stop button to return to standby.

(4) Service Data Menu

Service menu

Menu item	Options / sub-items	Description
SERVICE MENU FIRMWARE: xx.xx		Example) 01.03 The version mounted in the machine is displayed.
SERVICE MENU LANG. SELECT? ◀ - + ▶	NO YES	In User Mode, languages to switch are displayed or not. US/OT = Default: YES JP = Default: NO
SERVICE MENU CARD PROTECT?		Not used
SERVICE MENU MARKET MODEL? ◀ - + ▶	US OT JP	Market setting
SERVICE MENU COUNTER ACCESS After pressing COPY button ◀ - + ▶ input a value for the following item.	PRINT PAGE COUNT 0 / 0	No. of Print
	SCAN PAGE COUNT 0 / 0	No. of CIS reading
	ABS-M DOT COUNT 0	Absorption Amount to Main Ink Absorber
	ABS-P DOT COUNT 0	Absorption Amount to Platen Ink Absorber
SERVICE MENU NVRAM ACCESS ?		Not used
SERVICE MENU FACTORY DEFAULT ?		Not used
SERVICE MENU MECHANICAL SET ?		Settings after maintenance - Lift up ASF pressure plate to the shipping position (to avoid permanent set in fatigue of sping). - Set Pump to the shipping position (to avoid permanent set in fatigue of the Pump)
DIAGNOSTIC MENU Firmwqre: xx.xx		Test mode

(5) New SSSWs/Parameters Added to This Model

No SSSWs/parameters are newly added to this model.

3-6 DIAGNOSTIC MENU (hereinafter referred to as Test Mode)

(1) User Test Print Functions

User enabled Test print functions are as follow.

Nozzle check pattern

If you find a nozzle pattern indistinct or partially missing when you conduct this test print, do the head cleaning. If the symptom is not solved even after the cleaning is done three times, do the head refreshing. If the head refreshing does not solve the symptom, replace the BJ cartridge or the ink cartridge.

To print the nozzle check pattern, press the Menu button several times until USER DATA is displayed.

Press the right cursor button or the left cursor button to select MAINTENANCE, and press the OK button. Press the right cursor button or the left cursor button to select NOZZLE CHECK, and press the OK button.

(2) Test Mode Overview

Test mode can be executed by following the menu items from the display.

PANEL test

Tests the functions of operation panel

(3) Test Mode Menu

This machine is equipped with the test mode to check operations of various functions listed below. Please refer to Service Data Registration/Setting for instructions to select the test mode. Press the [Stop/Reset] button and then the [ON/OFF] button to end the test mode.

DIAGNOSTIC MENU

Firmware: xx.xx

* ' indicates that these are not used in the field.

- 1.CSLED Adjustme
- 2.Print COMET*
- 4.FB Scan Test*
- 9.Panel Test
- 10.Scanner Self* Diagnosis Test
- 11.DRAM Test*
- 12.CR Run-in*
- 13.PF Run-in*
- 14.PF Life*
- 15.Check Sensors*
- 16.ALL RUNIN*

a) PANEL Test

If you select test menu in the TEST mode, PANEL test is displayed. To select the test menu, press the OK button. In this test, check that the display, LED lamps, and keys on the control panel are operating correctly.

a-1) Display test

If you press OK button in the menu of the operation panel, 16 letters of "H" are displayed in two lines. If you press OK button one more time, all the LCD dots are displayed. If you press OK button once again, "_" is displayed. Verify that there are no LCD dots which fail to be displayed by performing this operation.

a-2) LED lamp test

The LED lamp test is selected by pressing the OK button after the display test.

When the OK button is pressed, all the lamps on the control panel light. Check for any LED that does not light during the test.

a-3) Operation button test

The Operation button test is selected by pressing the OK button after the LED lamp test.

In this test, you press the key corresponding to the displayed character to put it out. The table giving the correspondence between the characters and the keys is below.

Character	Operation button	Character	Operation button
P	Photo Index Sheet button	C	COPY button
S	SCAN button	P	PHOTO button
M	Menu button	-	- button
+	+ button	O	OK button
B	Black button	C	Color button
S	Stop/Reset button	O	ON/OFF button

9. PANEL TEST

↓ Press the OK button

HHHHHHHHHHHHHHHH
HHHHHHHHHHHHHHHH

H pattern display

↓ Press the OK button

████████████████
████████████████

All LCD dots display

↓ Press the OK button

____
____

_ pattern display

↓ Press the OK button

LED TEST

All LED lamps light up

↓ Press the OK button

KEY TEST
PCSPM-+OBCSO

When a button is pressed, the corresponding character goes out

↓ Press the OK button

OK

Press the Stop/Reset key to end the test.

3-7 Upgrading the version of flash ROM

To upgrade the version of flash ROM, always down load via USB interface.

<Flash ROM upgrading file>

The flash ROM upgrading file will be distributed in SSIS at the timing of upgrading the version.

<Upgrading Procedure>

The detailed upgrading procedure will be introduced by a Service Information bulletin when the version is upgraded.

[Prerequisite (reference)]

- Printer to Personal Computer:
  Connect via USB cable. (Connect only one printer to the computer.)
- Environment to be used, OS:
  Windows 2000/XP
- Printer driver:
  Should be installed in advance.

4. Cleaning Your Machine

4-1 Exterior

Main Unit Outer Covers

Dampen a soft cloth with water or a neutral detergent diluted with enough water, and wring it thoroughly. Wipe the covers with the cloth.

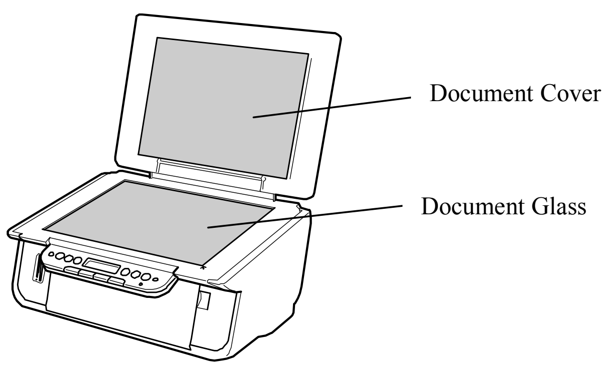
4-2 Scanning Unit

Document Glass

Open the pressure plate. Dampen a clean cloth and wring it thoroughly. Wipe the document glass with the cloth. Then wipe the document glass with a dry soft cloth well, so that no stain of the wet cloth remains on the glass. You may use a neutral detergent diluted with water if the glass is very dirty.

Document Cover

Open the pressure plate. Dampen a clean cloth and wring it thoroughly. Wipe the document cover with the cloth.



5. Shipping the Main Unit

If you must ship the machine as after making repairs, be sure to go through the following:

1) See to it that the BJ cartridge (print head) and the ink tank remain fitted in the carriage.
2) Press the ON/OFF button to turn off the power, and fix the carriage in its home position; then, disconnect the power cord.

Attention:

(1) If you leave the BJ cartridge (print head) alone on its own, the ink (especially black pigment ink) can start to cake. Be sure to keep the BJ cartridge (print head) fitted in the carriage in the course of shipment.
(2) On the other hand, if the carriage is not fixed to its home position, it can move right/left during shipment, possibly importing stress on the carriage flexible cable, or causing ink leakage.

Memo:

If you ship the BJ cartridge (print head) alone, perform the following procedure.

1) Install both the color and the black ink tanks (to avoid nozzle inside dried up).
2) Install the protective cap that was attached when you installed the BJ cartridge (print head) (to avoid damage on the face of print head caused by impact, etc.).

Part 2
Technical Reference

1. NEW TECHNOLOGIES

No new technologies are newly added to this model.

2. CLEANING MODE AND AMOUNT OF INK PURGED

To prevent printing problems due to bubbles, dust, or ink clogging, print head cleaning is performed before the start of printing, except in the following cases:

<Cleaning mode list>

Cleaning type	Amount of ink used	Time required
Manual cleaning Dot count cleaning Timer cleaning (24 hours to 2 weeks)	BK: Approx. 0.12 g CL: Approx. 0.14 g	Approx. 40 sec.
Print head replacement Ink tank replacement Cleaning when the print head is not capped at printer power on	BK: Approx. 0.42 g CL: Approx. 0.52 g	Approx. 45 sec.
Cleaning on arrival at user Timer cleaning (2 week to 3 months)	BK: Approx. 0.42 g CL: Approx. 0.52 g	Approx. 60 sec.
Print head deep cleaning Timer cleaning (3 months or more)	BK: Approx. 1.5 g CL: Approx. 2.2 g	Approx. 70 sec.

3. Print Mode

(1) Copy

Paper type	Custom setting value in driver UI	High speed 5	<- 4	 3	-> 2	High quality 1
Plain paper (Color)	Print quality Resolution HxV (dpi) Print control Ink	FAST 300dpi 1pass Bi C,M,Y,K		NORMAL 600dpi 3passes Bi/Uni C,M,Y,K	FINE 600dpi 4passes Bi C,M,Y,K	
Plain paper (B &W)	Print quality Resolution HxV (dpi) Print control Ink	FAST 600x1200dpi 1pass B K		NORMAL 600dpi 1pass Bi K	FINE 600dpi 4passes Bi/Uni K	
Photo paper pro	Print quality Resolution HxV (dpi) Print control Ink			FINE 600dpi 6 passes Bi C,M,Y,K		
High resolution paper (color)	Print quality Resolution HxV (dpi) Print control Ink			FINE 600dpi 6 passes Bi C,M,Y		
High resolution paper (B & W)	Print quality Resolution HxV (dpi) Print control Ink				FINE 600dpi 4 passes Bi K	
Other photo paper	Print quality Resolution HxV (dpi) Print control Ink			FINE 600dpi 6 passes Bi C,M,Y		

(2) Card direct print

Paper type	Custom setting value in driver UI	High speed 5	<- 4	 3	-> 2	High quality 1
Plain paper	Print quality Resolution HxV (dpi) Print control Ink					FINE 600dpi 4 passes Bi C,M,Y,K
Photo paper pro	Print quality Resolution HxV (dpi) Print control Ink				FINE 600dpi 6 passes Bi C,M,Y	
High resolution paper	Print quality Resolution HxV (dpi) Print control Ink				FINE 600dpi 6 passes Bi C,M,Y	

(3) Standard Color Printing (at PC Printer Driver)

Blue character: Default setting

Yellow frames: Selectable, even if Custom is not selected in the driver UI.

Paper type	Custom setting value in driver UI	High speed 5	<- 4	 3	-> 2	High quality 1
Plain paper	Print quality Resolution HxV (dpi) Print control Ink	Custom Fast 300 x 300 1pass Bi C,M,Y,K	Draft 300 x 300 1 pass Bi C,M,Y,K	Standard 600 x 600 2 passes Bi C,M,Y,K	High 600 x 600 4 passes Bi/Uni C,M,Y,K	
Photo Paper Pro	Print quality Resolution HxV (dpi) Print control Ink			Standard 600 x 600 6 passes Bi C,M,Y	High 600 x 600 12 passes Bi C,M,Y	Custom Fine 600 x 600 16 passes Bi C,M,Y,K
Super Photo Paper	Print quality Resolution HxV (dpi) Print control Ink		Custom Fast 600 x 600 4 passes Bi C,M,Y	Standard 600 x 600 6 passes Bi C,M,Y	High 600 x 600 12 passes Bi C,M,Y	
Matte Photo Paper	Print quality Resolution HxV (dpi) Print control Ink			Standard 600 x 600 6 passes Bi C,M,Y	High 600 x 600 12 passes Bi C,M,Y	
Glossy Photo Paper	Print quality Resolution HxV (dpi) Print control Ink			Standard 600 x 600 6 passes Bi C,M,Y	High 600 x 600 12 passes Bi C,M,Y	
High Resolution Paper	Print quality Resolution HxV (dpi) Print control Ink			Standard 600 x 600 6 passes Bi C,M,Y	High 600 x 600 12 passes Bi C,M,Y	
T-Shirt Transfers,	Print quality Resolution HxV (dpi) Print control Ink			High 600 x 600 6 passes Bi C,M,Y		
Transparencies	Print quality Resolution HxV (dpi) Print control Ink		Standard 600 x 600 2 passes Bi C,M,Y,K		High 600 x 600 4 passes Bi C,M,Y,K	

(4) Standard Gray Scale Printing (at PC Printer Driver)

Blue character: Default setting

Yellow frames: Selectable, even if Custom is not selected in the driver UI.

Paper type	Custom setting value in driver UI	High speed 5	<- 4	 3	-> 2	High quality 1
Plain paper Envelop	Print quality Resolution HxV (dpi) Print control Ink	Custom Fast 300 x 300 1 pass Bi K	Draft 300 x 300 1 pass Bi K	Standard 600 x 600 1pass Bi K	High 600 x 600 4 passes Bi/Uni K	
Glossy Photo Paper	Print quality Resolution HxV (dpi) Print control Ink			Standard 600 x 600 4 passes Bi K	High 600 x 600 4 passes Bi/Uni K	

(5) Borderless Printing (at PC Printer Driver)

Blue character: Default setting

Yellow frames: Selectable, even if Custom is not selected in the driver UI.

Paper type	Custom setting value in driver UI	High speed 5	<- 4	 3	-> 2	High quality 1
Plain paper	Print quality Resolution HxV (dpi) Print control Ink		Standard 300 x 300 1pass Bi C,M,Y	High 600 x 600 2 passes Bi C,M,Y		
Photo Paper Pro	Print quality Resolution HxV (dpi) Print control Ink			Standard 600 x 600 6 passes Bi C,M,Y	High 600 x 600 12 passes Bi C,M,Y	Custom Fine 600 x 600 16 passes Bi C,M,Y
Super Photo Paper	Print quality Resolution HxV (dpi) Print control Ink		Custom Fast 600 x 600 4 passes Bi C,M,Y	Standard 600 x 600 6 passes Bi C,M,Y	High 600 x 600 12 passes Bi C,M,Y	
Matte Photo Paper	Print quality Resolution HxV (dpi) Print control Ink			Standard 600 x 600 6 passes Bi C,M,Y	High 600 x 600 12 passes Bi C,M,Y	
Glossy Photo Paper	Print quality Resolution HxV (dpi) Print control Ink			Standard 600 x 600 6 passes Bi C,M,Y	High 600 x 600 12 passes Bi C,M,Y	

4. FAQ .Problem specific to the MP110/MP130 and corrective actions.

No.	*	Function	Phenomenon	Possible Call / Claim	Corrective action	Cause
1	A	Installation	Carriage error	- Check ink tank	Remove the packing material fixing the carriage.	The user may not have removed the packing material at unpacking and installation. Note: Even if the packing material remains, no parts are damaged.
2	A		- Check ink tank	- Check ink tank	Open the access cover, and install the ink tanks properly.	Since the user did not seat the ink tanks completely at unpacking, installation, or ink tank replacement, the ink tank contacts the main case.
3	B	Paper feeding	No paper feeding when a number of sheets are loaded. (PP-101)	- Paper out error - Paper cannot be fed - Cannot print	1. Perform roller cleaning from the printer driver. 2. Clean the paper feed roller with pre-moistened wipe or moistened cloth.	The paper feed roller slips on the paper at paper feeding.
4	B		Multi-feeding	- Multiple pages of paper are fed simultaneously. - Blank paper is ejected.	1. Fan the paper and set them in the ASF. 2. In case of PR-101, set the paper sheet by sheet in the ASF.	In the high temperature and high humidity environment, the frictional force between the front and back sides of paper becomes high, and sheets stick to each other, contributing to multi-feeding.
5	B		Envelope not feeding	- Paper out error - Paper cannot be fed - Cannot print	1. Perform roller cleaning from the printer driver. 2. Clean the paper feed roller with pre-moistened wipe or moistened cloth. 3. Reduce the number of envelopes loaded in the ASF. 4. Flatten the envelope (with a pen).	The paper feed roller slips on the paper at paper feeding. Note: Depending on the paper lots. This phenomenon may occur in DL envelope.
6	B		Envelope jam at feeding	- Paper out error - Paper cannot be fed - Cannot print	1. Perform roller cleaning from the printer driver. 2. Reduce the number of envelopes loaded in the ASF.	When the paper is fed by the slightly-slippery paper feed roller, the flap is caught in the return position of the claw.
7	C		Paper jam	- Paper out error - Paper cannot be fed - Cannot print	1. Remove the jammed paper from the paper pick-up side.	As the LF roller slips on the paper, the paper is not fed, causing the jam error at paper ejecting.

8	B	Image Quality	Smearing on printed side.	- Smear on the printed side of paper - Cannot print properly - Paper edge crease	1. Correct the paper curl. 2. Recommend the user to conduct printing in the print quality assurance area. (In the MP110/MP130, the head-to-paper distance cannot be changed.)	The edge of paper rises due when paper is curled, causing the print head to rub against the printed surface of paper, resulting in smearing.
9	B		Smearing on the backside, or address side of postcards	<Photo Paper Plus Double Sided> - Smears on the already printed side when printing the other side <When printing the address side of postcards> - Smears on the address side <When printing the message side of postcards> - Smears on the backside	1. Perform Bottom Plate cleaning from the printer driver. 2. Clean the ribs on the platen with cotton swabs/buds.	When borderless printing is conducted continuously, ink mist attaches to the ribs on the platen, and is transferred to the backside of the following paper.
10	C		Horizontal lines or uneven print density at the trailing edge of paper	- Cannot print to the bottom edge of paper - Lines or uneven print density appear in the trailing edge of paper - Cannot print properly	1. Recommend printing in the print quality assurance area. 2. Change the print quality from standard to high mode. 3. Try other paper (PP-101)	When the paper end comes off the pinch roller, printing is performed without the paper being held, preventing the ink drops from being ejected in the correct positions, resulting in unevenness.
11	C		Horizontal lines or uneven print density due to LF roller feeding at small pitch	- Lines or uneven print density (on skin tones and background) - Cannot print properly	Change the print quality from standard to high mode.	As the print media slightly slips while being fed by the LF roller, printed areas overlap, causing the problem.

*** Occurrence level**

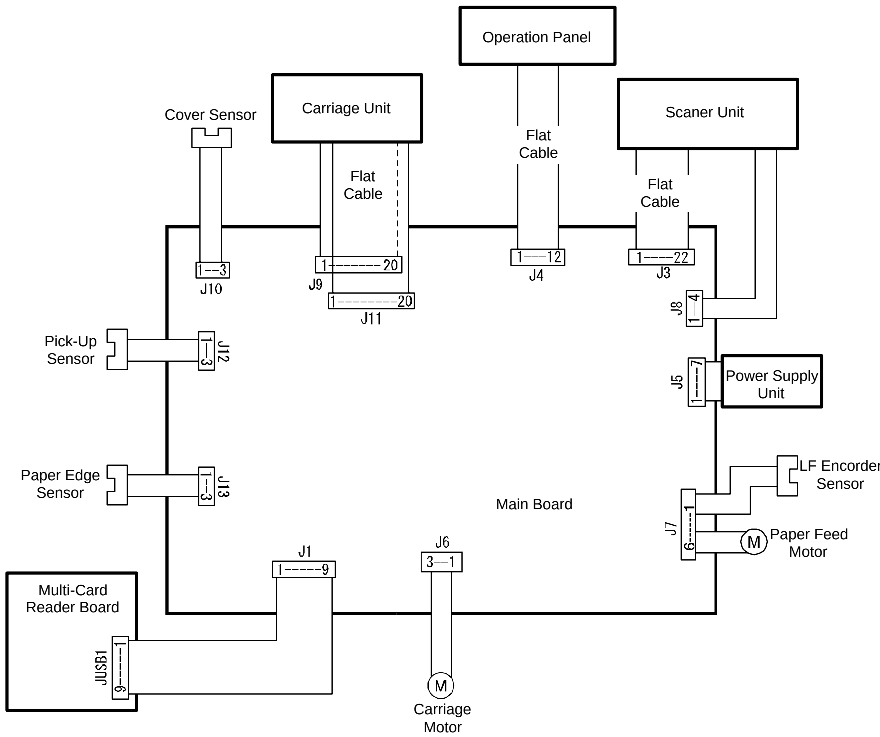
A: The phenomenon is likely to occur frequently. (Caution required)

B: The phenomenon may occur under certain conditions, but likeliness is assumed very low in practical usage.

C: The phenomenon is unlikely to be recognized by the user, and no practical issues are assumed.

Part 3
Appendix

1. Wiring Diagram



PIXMA MP110/MP130 Specification

<General>

Printer		YES
Scanner		YES
Copy		YES
Facsimile		NO
Memory Card		YES
Media		CF (Type I/II)
	Micro Drive	
	Smart Media	
	SD/miniSD*	
	Multi Media Card	
		xD-Picture Card*
	Memory Stick/Memory Stick Duo*	
	*: At Adapter	
Data Storage	READ	YES (unsupported for Windows 98/Me)
	WRITE	NO
Photo-Direct print		
Applicable Image		JPEG (DCF/CIFF/Exif 2.21/JFIF)
		DPOF
Supported Media	Size	A4, Letter, 4” x 6”, 5” x 7”
	Paper Type	Plain Paper
		Photo Paper Pro
		Super White Paper
		Glossy Photo Paper
		High Resolution Paper
		Photo Paper Plus Glossy
		Photo Paper Plus Semi-gloss
		Matte Photo Paper
Layouts	Plain Paper	Borderless, Print index (A4, LTR) (max. 70images)
	Photo Paper	Borderless, Print index (A4/LTL/4” x 6”/5” x 7”) (max. 4” x 6”/14 images, 5” x 7”/24 images)
Camera Direct Print		NO
Print Beam		NO
Noise		Approx. 47dB
Durability		3 years
		4,000 pages
Dimensions		17 in. (W) x 14 1/4 in. (D) x 7 1/3 in. (H)
		(433 mm (W) x 362 mm (D) x 186 mm (H))
		* With the Paper Support Extension and the Paper Output Tray closed
		17 in. (W) x 16 2/3 in. (D) x 10 7/8 in. (H)
		(433 mm (W) x 423 mm (D) x 276 mm (H))
		* With the Paper Support Extension, the Paper Output Tray, and Paper Support opened
Weight		5.4 Kg
Power Consumption		
MP110	Max.	Approx. 40W
	Standby	Approx. 4.0W (120V)
		Approx. 4.6W (230V)
MP130	Max.	Approx. 40W
	Standby	Approx. 4.5W (120V)
		Approx. 5.1W (230V)

<Scanner Function>

Type		Flatbet
Reading System	Sensor Type	Contact Image Sensor
ADF		NO
Reading Resolution	Optical resolution	1200 x 2400 dpi
	Interpolated resolution	9600 x 9600 dpi
Gradation bit	Color	48bit/24bit
(Input /Output)	Gray	16bit/8bit
Maximum Document Size		Letter/A4
Effective Scanning Width (mm) 216mm		
Local Scan Driver	TWAIN	YES
	WIA (Windows XP)	YES
Film Scan		NO

<Printer Function>

ASF		YES
Size		A4, A5, B5, 4"*6", LTR, LGL, 4"x6", 5"x7", Envelop
Paper Materials		Plain Paper (A4/A5/B5/LTR/LGL/CustomSize) Super White Paper, SW-201 A4/LTR High Resolution Paper (HR-101N) A4/B5/ Photo Paper Pro (PR-101) A4/LTR/4"*6" Photo Paper Plus Glossy (PP-101) A4/LTR/5"*7"/4"*"6 Photo Paper Plus Semi-gloss (SG-101) A4/LTR/4"*6" Glossy Photo Paper (GP-401) A4/LTR Matte Photo Paper (MP-101) A4/LTR Photo Paper Plus Double Sided PP-101D A4/LTR/5"*7" T-Shirt Transfer (TR-301) A4/LTR Transparency (CF-102) A4/LTR
	Envelope, COM10, DL, vertical.	
		Photo Stickers (PS-101)
Printing resolution		4800 x 1200 dpi
Printing Speed (page/min)		18 ppm (BK) / 13 ppm (Color)
Printing direction		Bi-direction
Printable area (none printable area form each edge)		Top margin: 3mm, Bottom margin: 5mm, Left/Right margin: each3.4mm (Envelope, Top: 8mm, Bottom: 26.5mm) (LTR/LGL, Left: 6.3mm, Right: 6.4mm)
Printing Cartridge		QY6-0054 Bk: 312 Nozzles Y/M/C: 128 Nozzles
Ink Tank		BCI-24Black / BCI-24Color
Print Yield	BCI-24Black	Approx. 300 Pages (Black 1,500 character std pattern) Approx. 520 Pages (ISO JIS-SCID No.5 pattern)
	BCI-24Color	Approx. 170 Pages (ISO JIS-SCID No.5 pattern)
Ink Remaining Detection		YES
	Detection Method	Warning by counting dots
Borderless Printing		YES
Silent Mode Printing		YES
CD-R Label Print		NO
		NO

<Copy Function>

Copy Print Resolution	Black & White		600 dpi
	Color		1200 dpi
Copy speed	Black & White (Draft)		16 ppm
	Color (Fast)		10 ppm
Scanning Density Adjustment		YES	
Manual			5 positions
Multiple Copies			99
Preset RE Ratio	Enlarge	Max.	400%
		4"x 6" -> LTR	YES
		5"x 7" -> LTR	YES
	Reduction	100%	YES
		A4 -> LTR	YES
		Min.	25%
Zoom			YES
Zooming Range			25 – 400 %
Image Quality		B & W	Fast, Normal, Fine (photo)
		Color	Fast, Normal, Fine (photo)
Energy Saving Mode			-
Image Combination			NO
Image Repeat (Auto/Manu)			NO
Mirror Image			NO
Borderless Copy			YES
Poster			NO
Entire Document			NO

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